MYRMECIA

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The cover for this year's *Myrmecia* features an illustration of a Cerambycid beetle by Meaghan Meredith, University of Newcastle. Meaghan's drawing was Highly Commended in the Student Section of the 2008 AES. Illustration

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NOTICE

Statements made in *Myrmecia* do not necessarily represent the views of the Australian Entomological Society.

COPY DEADLINE FOR NEXT ISSUE

Material for publication in the May issue of *Myrmecia* should be in the inbox of the Editor by Friday **10 July 2009**.

EDITORIAL

The second edition of Myrmecia for 2009 has shown an increase in contributions from around Australia – please keep it up! I also welcome images. Members may have noticed a slight change in content, with the addition of *Entomology in the News* and *Interesting websites*. Entomology in the news reports on entomological research being picked up by the mass media. I hope it provides information which members find interesting. Stories are sourced from Australia and overseas and as I am not omniscient, I welcome contributions and feedback from members on this and other information for Myrmecia.

Books for review. CSIRO Publishing has provided three new books for review to the society: '*Stick and Leaf Insects of Australia*' by Paul D. Brock and Jack W. Hasenpusch, '*Dust Mites*' by Matthew J. Colloff and '"*Arachnids*" by Janet Beccaloni. If you'd like to review a copy, please contact me directly.

Sonya BROUGHTON
Myrmecia Editor
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NOTE FROM THE TREASURER

In late June 2009, Membership Subscription Renewal Notices for the financial year 2009-2010 will be mailed to AES members. Please note that this year the renewal notices will be sent to you via email. So, if you have changed your email address within the 2008-2009 financial year, please advise me of your new address as soon as possible.

Gordon HOOPER
AES Treasurer
Email: ghs.hooper@netspeed.com.au

PRESIDENT'S REPORT

Some reflections on doing one's job, or I never thought there would be days like these!

When Jonathon Major approached me to nominate to be President of the Society, he pointed out one of the tasks would be to write brief pieces for Myrmecia. He felt sure I'd have some things to say. One can only really reflect on one's own experiences, but I suspect I may not be alone in those experiences, nor are those experiences likely to be restricted to the University sector.

When I started 'work', in what was then a small department of Entomology, I certainly did not think I was a "real" entomologist. I had just completed a PhD on the effect of spatial heterogeneity on resource utilisation in animals. My model system was monarch butterflies and milkweeds. I was acutely aware I actually did not "know" a great deal about insects, but I was prepared to learn. What was more important was that the work environment I found myself in was supportive and collegiate. There were no touchy-feely "courses" in x,y,z and I was not aware of the existence of a HR section, though no doubt there was one! My then head of department spared me duties on various committees and suggested avenues for research.

I distinctly remember Gordon Hooper suggesting Helicoverpa would be a good pest system to work on. There was not the feigned interest once a year in a performance appraisal that occurs these days, with vacuous forms and paper work that are ceremonially filled in. Rather one saw all one's colleagues on a regular basis, sometimes daily at morning tea. If you were having problems, someone like Elizabeth Exley or Tom Woodward would recognise it and have a quiet word. To get a young academic like myself started, I was invited to join in on projects led by senior scientists at the time and so get into the 'publish or perish' treadmill (Roger Kitching had already mentored me successfully into that aspect of performance).

One was encouraged to develop projects with colleagues in QDPI, CSIRO and even other Universities. There was even time to get stuck into these and produce results. I was privileged enough to be part of a system that valued me (well one felt as though it did), and provided a mentoring environment: effectively an apprenticeship into ones profession. I'd like to think I may have even learnt something about insects, particularly while trying to educate others, the numerous postgraduates from all parts of the world. There are few better ways of learning than when trying to teach others. Do not get me wrong it was not all idyllic. There were problems of various sorts, after all one had to work with people and we all have our failings and foibles, but at least there was a sense of purpose and valued achievement.

Then something happened. I was never sure quite what triggered this great bout of 'progress' and incessant change, for what at most times appeared to be for change sake or grandstanding. I suspect it was something to do with a new improved business model and reductions in funding. Symptomatic was the demise of stability. My address line on papers went from the Department of Entomology, to The Department of Zoology and Entomology, to Botany, Zoology and Entomology, to the School of Life Sciences, then the School of Integrative Biology and now the latest incarnation, the School of Biological Sciences. I can console myself in the knowledge that these changes seemed to happening everywhere. My colleagues in what was then the entomology of branch of QDPI were similarly 'restructured' on a regular basis.

During this same time we went from a Faculty of Science, to a Faculty of Biological and Chemical Sciences and wait for it, back to a Faculty of Science. I should have guessed there was something amiss when early on a whole new tier of management called PVC's (Pro-Vice Chancellors not polymers of vinyl chloride) with their own assistant staff was created in the name of "efficiency". Each change has been justified as being better than what went before and that we are all better off. I am somewhat reminded of

the "emperor has no cloths". After all if it is called "quality" it must be so. The improved model has an emphasis on "policy", "procedures" and "process", whatever the outcome or results. The most recent manifestation of this for the University sector at least is an audit with some wet sounding name. If any "outcome" is problematic it can be clothed in impenetrable babble and 'benchmarked' against some "world standard" and all is well. The triumph of hollow spin I suspect.

So does any of this matter? No point saying it does, because in a smart state and clever country the spin merchants will simply say we have world's best practice, or insert some other piece of babble at this point. But one has to ask how the previous fully staffed entomology branch at QDPI would have responded to the fireant incursion? That experiment cannot be run but future breaches of quarantine, the southward spread of mosquitos, outbreaks of major crop pests etc could be problematic. We will no doubt see one day.

Not all is doom and gloom. You can actually still do research at Universities, educate postgraduates, only it is called "training" these days (I always thought you trained circus extras). Certainly electronic access to the library has meant I do not even have to leave my desk to access information. That must be a plus. The only problem is that you have to speak the babble of the modern business school. So what set off this whinge? A whole afternoon devoted to the presentation of, wait for it, how to assess the assessment of teaching portfolios. Strange days indeed!

No doubt I will be told I need a course in "Cynicism Management"! See you at the Darwin Conference.

Myron ZALUCKI
President

VICE PRESIDENT'S REPORT

The past few months have been busy ones for the new executive, as we fully take up the reins of the Society. For our first few executive meeting Graham Thwaite, the immediate past Treasurer, kindly attended our executive meetings and continued to work on behalf of the Society to ensure a smooth handover. Speaking of the Orange Executive, it is with pleasure that we report that Professor Geoff Gurr has been appointed to the NSW Scientific Committee by the NSW Government Department of Climate Change and the Environment.

Dr Theo Evans (CSIRO Entomology) represented the Society at Science Meets Parliament in mid March this year. Organised by FASTS (The Federation of Australian Scientific and Technological Societies – see page 24 for details), the event was very successful with just over 100 of the 226 parliamentarians attending one or more of the events held over the two days. Topics discussed ranged widely across the full spectrum of science in Australia, including climate change, cleaner and renewable energy sources, environmental degradation and biosecurity. The event offers a unique and valuable perspective on the interface of science, policy and politics at the federal level in Australia, and I urge members to consider nominating for one of the two Society places next year. Theo had extended discussions about his science with Melissa Parke (Labor) MP for Fremantle WA, Danna Vale (Liberal) MP for Hughes NSW, and Bill Heffernan (Liberal) Senator for Qld.

The Society membership drive has been paying dividends, and since my last report the society numbers have swelled to just over 490, and we are well on the way to exceed out target of 500 soon. A big welcome to all those new members, and thanks to all the members and regional councillors who found, proposed and seconded new members.

The executive would also like to draw your attention to the new Privacy Code of Practice for the Society. We would like to thank our Privacy Officer Dr Jane Wright for bringing this matter to fruition (page 5).

The society is endeavouring to conduct more immediate and direct communication with members by email – please ensure that the Memberships Secretary Dr Stephen Cameron has your current email address.

I also note that the 40th AGM and Conference in Darwin is drawing near. Please see the conference website at http://www.evolutionbiodiversity2009.org/ for more details. The conference is a combined one and will appeal to many interests, ranging from Darwin and evolution, entomology, invertebrate biodiversity and conservation, and coral reef biology. I hope that many of our members as possible become active in the scientific aspects of the conference and in the society business, and I look forward to seeing you there.

David YEATES

Vice President

ONLINE SUBMISSION OF MANUSCRIPTS TO THE AUSTRALIAN JOURNAL OF ENTOMOLOGY

As foreshadowed in my report to the 2008 AGM, we have now reached the point of moving to online submission of manuscripts to the Australian Journal of Entomology. The journal's Manuscript Central website (http://mc.manuscriptcentral.com/aen) is at present (late March) in test phase. By the time this issue of Myrmecia appears, I expect that the site will be fully functional. I encourage members to look at the site, check out the guidelines, familiarise themselves with it and submit manuscripts. Please refer to the journal home page for more details.

John MATTHIESSEN

Chief Editor, Australian Journal of Entomology

THE AUSTRALIAN ENTOMOLOGICAL SOCIETY INC. 40th AGM

The society's 40th Annual General meeting will be held in Darwin, Northern Territory, in September 2009. A provisional agenda list appears below.

PROVISIONAL AGENDA

1. Opening and general announcements
2. Announcements of proxies and apologies
3. Deaths of members recorded since 39th Annual General Meeting
4. Minutes of 39th Annual General Meeting
5. Business arising from the minutes
6. Annual Report
   - Vice President
   - Treasurer
   - Chief Editor
   - News Bulletin Editor
7. Committee Reports
   - Conservation Committee Report
   - Education Committee Report
8. Society Awards
9. Business arising from the 77th Council Meeting
10. Announcements of Office Bearers and Councillors for 2009-10
11. Appointment of Auditor
12. Report of the organising committee for 40th AGM
13. Report of the organising committee for 41st AGM
14. Other business (arranged with Secretary no later than 31 August 2009)
15. Close

CALL FOR NOMINATIONS OF OFFICE BEARERS AND COUNCILLORS

The following offices will fall vacant at the Society's 40th Annual General Meeting in September 2009. Nominations for election should be made on the form available on the Society's website and should reach the Secretary no later than 31 August 2009

The President was elected for 12 months at the 39th AGM and is eligible for election for a further 12 months. The Vice President, Secretary and Treasurer were elected at the 39th AGM for

two years and will be eligible for an additional two years from 2010.

Vacant Office	Present Incumbent
*President	Myron Zalucki
Chief Editor	John Mathiessen
Myrmecia Editor	Sonya Broughton

Regional Councillors

A maximum of three years is allowed under the Constitution for any Regional Councillor's term. Number of years served by each Councillor by the AGM in 2008 is given in brackets. Those who have completed three years are not eligible for re-election. Overseas representatives and Representative Councillors do not have limited terms. Nomination forms are available

Australian Capital Territory	Trudy Wharton (2)
New South Wales	Sarah Mansfield (1)
	Murray Fletcher (1)
Northern Territory	Chris Palmer (2)
Queensland	Jane Royer (1)
	Tony Clarke (1)
South Australia	Joanne Kent (1)
Tasmania	Paul Walker (2)
Victoria	Amanda Kobelt (3)
Western Australia	Modika Perera (2)
Overseas Representatives	
Papua New Guinea	Lastus Kuniata
Representative Councillors	
Ent. Soc. Queensland	Noel Starick
Ent. Soc. New South Wales	Ted Taylor
Ent. Soc. Victoria	Ian Endersby

AES PRIVACY POLICY (effective 26 February 2009)

It is the policy of Australian Entomological Society Inc [hereinafter "the Society"] to respect the privacy of members by:

- Keeping personal information held about members secure;
- Using information only for those specific, approved, publicly stated purposes for which it was gathered;
- Allowing members to check the accuracy of information held on themselves and to amend it if necessary;
- Publicly stating how information is kept secure, and under what circumstances it may be divulged.
- Using an opt-in procedure for members to become part of an email or other information exchange mechanism that relates more broadly to entomology than just the society business.

PROCEDURES

1. Only that information of a personal or private nature absolutely required for the good order and running of the Society will be kept about all members.
2. Any personal details shall be kept in strictest confidence by the Executive Committee of the Society, which shall be responsible for its security.
3. Printouts or copies of the membership list in any format are to be made only for specific, approved purposes which, unless otherwise decided by a meeting of the Executive Committee, shall be limited to:
   - Labels for *Australia Journal of Entomology*, *Myrmecia*, or other Society mail outs.
   - Reports to the Executive of new and unfinancial members.
   - Communication between the Executive Committee, other Society office bearers, holders of delegated positions, and members.
   - Requirements for audit of the financial affairs of the Society
   - Notification of Scientific Conference registration details by the Conference Organising Committee.
   - Advice of members' areas of expertise for Technical Editors seeking referees for the *Australian Journal of Entomology*.
4. No person on relinquishing or being removed from a position entitling them to access to personal membership data shall continue to have access to such data. Any personal information and lists, electronic or otherwise,

shall be destroyed or returned to the Executive Committee for re-assignment or destruction as appropriate.

5. Method of payment details such as credit card numbers, if held electronically, will be secured by password access and, if held in hard copy, that copy is to be held under lock and key, and will not be released to any third party, except in the process of securing legitimate payments to the Society.
6. This policy shall be published in the Society's Newsletter, and each new member informed of it on their acceptance into the Society. It shall also be published on the Society's web site.
7. Any member who wishes to check details of information held may do so, and a copy will be emailed or posted to them within one month of their query being received. The Society undertakes to amend or correct any inaccurate information.

This policy is to be reviewed each time the location of the Executive and Headquarters of the Society changes, or more often if found to be inconsistent with the Society's objects, or with Commonwealth or State legislation.

NEW MEMBERS

We are delighted to welcome a 'fine crop' of 23 new members, elected since the new executive took office, four of them postgraduate students. Thanks to AES members who have recruited new members and apologies for delay in announcement of some of these.

Elected October 2008-April 2009

Post graduate students:

David Perovic, studying at Charles Sturt University, Orange, is interested in biocontrol of invasive organisms.

Elissa Suhr, School of Biological Sciences, Monash University, is a keen myrmecologist, and is studying historical records of interceptions of the Argentine Ant in Australia and genetic aspects of source and established colonies.

Bryan Lessard, based at CSIRO Entomology, Canberra, is a fulltime PhD student studying the evolution and phylogenetic relationships of Southern Hemisphere horse flies and the influence of the separation of Gondwana.

Stephen Quarrell, University of Tasmania, has interests in chemical ecology of forest insect pests, and is to study management of pest earwigs in commercial fruit orchards through use of pheromones.

Bobby Hitchcock, is studying Lepidoptera at CSIRO Entomology and ANU.

Full members:

Bradley McNeil, is currently with Queensland DPI&F in the Plant Pathology Herbarium at Indooroopilly, Brisbane, but maintains a keen interest in whiteflies (Aleyrodidae: Hemiptera).

Rebecca Morley, at the University of Queensland, is the project manager for development of the new National Curriculum for Entomology

Kulan Turton, is working for NSW DPI at Elizabeth Macarthur Agricultural Institute, in plant pathology research, and doing a degree in Environmental Science through Charles Sturt University, and like most us, is fascinated by insects.

Lynne Forster, Hobart, is interested in the ecological relationships of spiders and predatory insects.

Stacey McLean, now Senior Program Officer Biodiversity Planning Natural Environment and Sustainability, Brisbane City Council.

Denis Taggert, from NE Victoria, has broad interests in insects and spiders, and especially in behavioural ecology of predators and parasites.

Zara Ludgate, of Toowoomba, working for Qld DPI, previously studied the effects of plant defence compounds on fitness of diamondback moth and is now monitoring insecticide resistance in silverleaf whitefly and integrated pest management in grain crops.

Sarina MacFadyen, CSIRO Entomology, Canberra, has a background in studies on food webs and management of agroecosystems and is now researching the interactions between species within complex communities.

Michael.Shackleton, Melbourne, is a freshwater scientist with the Victorian EPA and has interests in Trichoptera taxonomy.

Rolf Oberprieler, CSIRO Entomology, Canberra, is a coleopterist, with a primary research interest in weevils of the Australian and

Pacific regions, as well as an interest in Lepidoptera.

Robyn Russell, CSIRO Entomology, Canberra, is a molecular biologist working on the molecular basis for evolutionary change, using the enzymology of pesticide detoxification as the primary model system.

Mark Lonsdale, Chief, CSIRO Entomology, Canberra, has research interests in invasive species and biological control.

Theo Evans, CSIRO Entomology, Canberra, is a termite worker, evolutionary biologist and ecologist, and currently is studying the ecological importance of termites.

Andy Sheppard, CSIRO Entomology, Canberra, is interested in invasion ecology, especially the role of natural enemies in plant population dynamics to better understand how species invade Australia.

Bernie Dominiak, NSW DPI, Orange, has a long history of interests in applied entomology, especially population studies on Queensland Fruitfly, *Batracera tryoni*, but also other pest species, and is now the project coordinator on Queensland Fruitfly surveillance and biosecurity operations.

John Botha, DAFWA, Western Australia, had extensive experience in integrated pest management (agricultural entomology, plant protection), before coming to Australia from South Africa, and is now a general grains and horticulture biosecurity entomologist, providing information relating to quarantine, risk, policy, eradication, management and contingency planning for mostly exotic pest species, and undertaking a host of other activities.

Leigh Nelson, is the Schlinger Postdoctoral Fellow at the Australian National Insect Collection, and is investigating the coevolution of *Fergusonina* flies, *Fergusobia* nematodes and eucalypts (Myrtaceae).

Victoria Haritos, at CSIRO Entomology, Canberra, studies the biochemistry of insects and other organisms to discover novel processes and products for biotechnological applications.

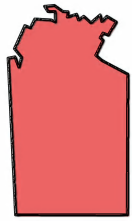
Alice WELLS
Honary SECRETARY

DONATION TO THE VICTORIAN BUSHFIRE APPEAL

Recently, the Society found a different way to support the Victorian Bushfire Appeal. Two years ago, the Society wrote off the surplus insect garments from the Brisbane ICE and Jane Wright was gradually donating these to charity a box or two at a time. Jane enquired, but was told that the bushfire appeal much preferred cash to a donation of sweatshirts. At the same time, there was a sudden requirement to empty the room where the garments were being stored, within 2 days. So Jane offered the garments to the staff at CSIRO in return for a donation to the bushfire fund. The response was just terrific. A total of $750 was collected and sent to the bushfire appeal and the remaining few boxes of garments were dispatched to two charities.

ENTOMOLOGY AROUND AUSTRALIA

NORTHERN TERRITORY



Department of Natural Resources, Environment, the Arts and Sport

Biodiversity Unit

In Darwin earlier this year, **Michael Braby** moved from the Biodiversity Unit across to the Museum and Art Gallery Northern Territory to take up a 12 month secondment as Curator of Entomology in the Natural Sciences Unit. His main focus will be to assess the curatorial and conservation status of the large insect collection, and to recommend plans for its future development and strengthen the collections capacity and capability as a working reference collection. He is also busily involved with the steering committee for Darwin 200: Evolution and Biodiversity (http://www.evolutionbiodiversity2009.org/), the combined AES conference to be held in Darwin later this year. Michael has also taken over as Editor of the Northern Territory Naturalist, a peer-reviewed journal devoted to the natural history and ecology of northern Australia.

Meanwhile, in Alice Springs **Dianne Bell** has just started a part time honours project with **Chris Palmer**, investigating the phenology of

beetle assemblages over time and their response to climatic factors. The project will last two years and include 12 months of fieldwork in West MacDonnell National Park. Di is only the second honours student to be enrolled at the Alice Springs campus of Charles Darwin University, so it's great that the second postgraduate student at a campus of any institution is studying entomology! Over the long Alice Springs summer Chris has been expanding his work on buffel grass (*Cenchrus ciliaris*), and has so far turned up two exotic species feeding on buffel that were not found on native grasses in the same area. Chris hopes this will contribute to an overall picture of the effects of this introduced pasture plant on invertebrates in central Australia.

Charles Darwin University – School for Environmental Research

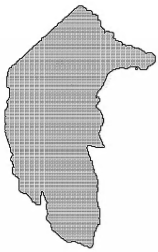
Thanks to the efforts of **Lubomir Bisevac** and **Don Franklin**, the School for Environmental Research's contribution to the analysis of data from long-term monitoring of mosquitoes around Darwin is proceeding well. The monitoring was undertaken by the Medical Entomology Branch of the Dept. of Health. A paper they prepared was published in the *Journal of the American Mosquito Control Association* in March. In it, they compared the effectiveness of light and CO_2 traps for monitoring mosquitoes. Such comparisons are not new. What is new is the large scope of the study: evaluation at 6 sites (one of each trap type per site), each assessed weekly through a full annual cycle and across the full assemblage of 40 species present not just the few that are medically important. Species preferences varied, but overall, CO_2 traps were far more effective. However, among key species, seasonal trends identified by the trap types were similar. Furthermore, the difference between trap types was consistent among sites notwithstanding considerable differences between sites in the mosquito assemblages present. Lubomir and Don are currently analysing spatial and temporal patterns in mosquito assemblages from 11 sites around Darwin monitored weekly for five years.

And to some more recent news, a survey in Kakadu National Park in March by **Neil Collier** and Don Franklin revealed a new location for a Data Deficient butterfly, the Kakadu Four-barred Swordtail *Protographium leosthenes geimbia*. Previously reported from just a few square kilometres on the Arnhem Land escarpment, the new location is also on the escarpment but 45 km away.

Chris PALMER
NT Regional Councillor

AUSTRALIAN CAPITAL TERRITORY

ANIC



The big news in ANIC recently was the arrival of six new people. **Beth Mantle** has been appointed as the new Collection Manager of ANIC. Beth did a PhD at the University of Queensland on the physiology and behaviour of the green-striped burrowing frog *Cyclorana alboguttata* in western Queensland. She then spent some time as Regional Coordinator for the Ginninderra Catchment Group of Frogwatch. Her work there was in a community-based volunteer program to monitor frog populations in the ACT and surrounding areas, and to educate school children on the ecological importance of frogs and the wetlands they inhabit. Beth has also worked as an ecological consultant, and spends much of her free time photographing wildlife, especially birds, reptiles and amphibians. She is looking forward to getting to know Australian entomologists and meeting the challenges involved in managing the ANIC, and also plans to try her hand at taxonomic research on native cockroaches.

Bryan Lessard did his undergraduate degree at the University of Wollongong, with Honours in the Forensic Entomology laboratory. He has now enrolled for a PhD at ANU on the systematics and phylogeny of horse flies of the genus Scaptia (Tabanidae), using both morphological and molecular data. The males of this genus pollinate flowers, and the females are agricultural pests that bite livestock and humans.

Leigh Nelson also has a background in forensic entomology at the University of Wollongong. She did her PhD there on the taxonomy and

New faces in ANIC. Back row: Bryan Lessard, Leigh Nelson, Beth Mantle. Front row: Anita Lyons, Abdul Gafur, Michael Thompson. [photo Bruce Halliday]

biology of flies of the genus Chrysomya (Calliphoridae), which can be used to determine the post-mortem interval in cases of suspicious death. She is now working in ANIC on a Post-Doctoral Fellowship funded by the Schlinger Foundation. She will examine the co-evolutionary relationships between gall-forming flies of the family Fergusoniidae, their myrtaceous host plants, and mutualistic nematodes of the genus Fergusobia that also inhabit these galls. **Abdul Gufar** was a biology teacher at Lambung Mangkurat University, Banjarmasin, South Kalimantan, Indonesia. He has now enrolled in a PhD at ANU, on the molecular and morphological systematics of nematodes of the genus Radopholus. This genus contains many native species, but also includes important pests that attack bananas and other crops.

Anita Lyons studied for her PhD in Environmental Biology at Curtin University, on arthropod biodiversity in mallee species that are used for oil production. **Michael Thompson** studied science and psychology at the University of Queensland, and moved into a position in industry, working in the design and management of adult training programs. He has an agricultural background, and has worked with pests and diseases in a variety of crops, especially cotton. Anita and Michael are working on the joint AQIS/CSIRO project to expand the existing network of remote microscopes for quarantine diagnostic services, and to further develop and the strengthen links between AQIS, CSIRO, and other organisations involved in pest identification in Australia, New Zealand, and southeast Asia.

Marianne Horak, Ted Edwards, **You Ning Su** and **Adam Slipinski** did a collecting trip to north Queensland in January. Between cyclones they did some good collecting of fresh moth material to use in the molecular phylogeny of Olethreutinae that Marianne is working on with **Stephen Cameron**, and for the Beetle Tree of Life

project. **You Ning** was especially pleased to bag a male of a spectacular and previously unknown species of Tineidae. **Ted Edwards** also did some very successful collecting at high altitudes in Kosciuszko National Park. He came back with two little-known species of Hepialidae that only fly on one night per year. One of the species has not been collected for over 100 years, and the other was a collection of males of an unnamed species that was known until now only from the female. **John Dugdale** visited from New Zealand to look for taxonomic characters in immature Tortricidae to add new data to the existing phylogeny of the family.

In Coleoptera, **Adam Slipinski**, **John Lawrence**, **Ainsley Seago** and **Anne Hastings** are celebrating the completion of 60 chapters for the second beetle volume of the new Handbook of Zoology, which should be published in October. They are now enjoying the opportunity to get back to research, especially in the international collaborative project on Coccinellidae. **Ainsley Seago** is working with **Sarah Weisman** and **Tara Sutherland** to investigate the evolution of opal-like iridescence in weevils in an evolutionary framework. Their exploratory studies have demonstrated that x-ray crystallography can be used to characterise the photonic crystals that give rise to these unusual structural colours.

The mite laboratory has also been busy lately. **Jenny Beard** from the Queensland Museum visited to check the identification of some predatory Phytoseiidae, and to collect plant parasites of the family Tenuipalpidae from a few local Canberra beauty spots. **Giselle Perdomo** from Monash University visited **Matt Colloff** and **Bruce Halliday** to get some basic training in mite identification, as part of her ecological project on microarthropods in moss.

In Diptera, **David Yeates** and **Chris Manchester** report that they have sorted out some technical problems and are now producing a steady stream of DNA sequences from wingless flies of the family Micropezidae, which breed in pitcher plants. They have also recently finished work on a LucID key to 20 genera of Tabanidae, which is now being prepared for internet publication. David travelled to the USA to visit **Brian Weigmann**, **Sonya Scheffer** and **Mike Irwin** to work on a series of collaborative projects, and to develop a proposal for a big new Diptera component of the NSF Assembling the Tree of Life project.

The thrips room has been quiet but productive recently, with few visitors but three papers published in Zootaxa resulting from collaboration with previous visitors. **Desley Tree** visited for a week from QDPI, in connection with her studies on thrips diversity for a Master's degree. **Laurence Mound** was invited to the annual meetings of the German Entomological Society at Göttingen to give a keynote address to the systematics section, and also spent time with the thrips collections at Frankfurt, Halle, and London.

In the molecular systematics laboratory, **Stephen Cameron** is getting some good sequence data from termites, to provide taxonyomic results that will eventually be used to characterise termite species in the Atlas of Living Australia. **Cate Smith** is making progress in using DNA data to check the identification of ants in the taxonomically difficult genus Iridomyrmex. Stephen has just received new funding for a postdoctoral fellowship to collect molecular data for a study of the origin of the Australian beetles, and he expects to advertise the position very soon.

Mike Hodda and economist **David Cook** have revised their estimate of the cost to Australia if the potato cyst nematode, *Globodera rostochiensis,* was to become established and widespread, to $370 million over 20 years. It would cause significant damage to the potato and tomato industries, and indirect costs to a range of other crops as a result of biosecurity restrictions. On the basis of that figure, Mike now believes that it may be possible justify trying to eradicate the present outbreak of this pest in eastern Victoria.

Bruce HALLIDAY
ACT Regional Councillor

QUEENSLAND

FAR NORTH

James Cook University, Cairns

Darrell Kemp has accepted a faculty position within the department of Biological Sciences, Macquarie University. He still aims to maintain his research ties with the tropics via an adjunct senior research fellow position at James Cook University.

Kylie Anderson has resigned from AQIS after ten years of service. Kylie is now concentrating on her PhD thesis write-up, but is also teaching some first-year biology at James Cook University to keep up a small cash-flow.

NAQS, Cairns

Despite unfavourable weather, transportation problems and communication breakdowns, **Anthony Rice** led the intrepid NAQS Plant Health team on a week's safari to various locations in northern Cape York Peninsula. Many interesting specimens were collected but fortunately, none of quarantine significance. **Tony Postle** sought exotic insects in driftwood and flotsam on the coastline north of Weipa. Nothing was detected in the smaller pieces but several of the large logs and beams yielded termites and larval beetles and moths. Such findings suggest that this medium represents an incursion pathway for exotic timber pests into Australia.

DPI&F, Cairns

Jane Royer has been finalizing a paper on the spread of red-banded mango caterpillar on Cape York; assisting with tropical trapping for the CRCPB Female Fruit Fly Lures trials project headed by **Katina Lindhout**; identifying many sundry suspect exotic insects including Asian honeybee and organizing her replacement (**David Hancock**) while she is on 3 months leave in Europe.

Jane ROYER
Far-north Qld Regional Councillor

SOUTH-EAST

Army Malaria Institute (AMI)

As part of the Pacific Malaria Initiative, funded by AusAID, **Bob Cooper**, **Lloyd Cooper**, **Donna MacKenzie** and **Steve Frances** spent between 3 to 6 weeks during October-November 2008 collecting mosquitoes on the Santa Cruz Island group, Solomon Islands. The survey was the first since the mid 1970's to determine the distribution, larval ecology and night biting habits of the malaria vectors in island communities where malaria elimination is being proposed.

Steve Frances, **Donna MacKenzie** and **Lloyd Cooper** conducted evaluations of repellents and clothing impregnated with permethrin at Redcliffe airport during February. They used the Mosquito Control laboratory of the Moreton Bay Regional Council, and were able to discuss mosquito control measures with **Cecily Draper** and her team at the council.

Oxford University Press will release a book entitled "Prevention of Bug Bites, Stings and Disease" by **Dan Strickman**, **Steve Frances** and **Mustapha Debboun**, in April 2009. The book contains information on a range of blood sucking and stinging arthropods, and includes line drawings and colour photographs of some. Some excellent photographs taken by **Stephen Doggett**, Westmead Hospital, are included in the book.

Steve FRANCES

School of Biological Sciences, UQ

Two students have joined **Sassan Asgari**'s group: **Alex Abraham**, an MSc student, and **Guoqing Toh**, an Honours student, are working on the role of small RNAs (microRNAs) on insect host-virus interactions. Sassan is organizing a symposium on "Genomic aspects of polydnavirus studies" at the Society for Invertebrate Pathology conference held in Utah in August 2009. Polydnaviruses are symbiotic viruses associated with parasitic wasps facilitating parasitisation.

David Merritt continued his studies of glow-worm biorhythms in a field trip to Tasmania in January. He spent three weeks in the deep south visiting Mystery Creek Cave just about every day. The most exciting discovery was that cave glow-worms synchronise to each others' lights. Experiments involved exposing populations to artificial light (a 12 V LED lamp and timer) and using time-lapse photography to determine the

One of the O'Neill lab's field cages in Cairns.

changes in their rhythms. He also set up a UV light trap in the cave to see if the flight times of the prey items (mainly chironomids) coincided with the peak glowing times. The most exciting part was experiencing a cave flood when an expensive datalogger took a swim. Two new Honours students have begun projects with Dave this year. **Lisa Rigby** and **Robyn Willis** are both working on aspects of glow-worm biology.

Francesca Frentiu has joined the **Scott O'Neill** and **Beth McGraw** labs where she will be working on the evolution of dengue virus in two of its hosts – mosquito and human. The O'Neill lab has just begun cage trials of *Wolbachia*-infected mosquitos in Cairns, investigating survival of the mosquitos in a more natural setting than the UQ lab. The cages are constructed to be similar to the underneath of a "Queenslander" type house, with surrounding plantings, to mimic natural urban conditions.

Tom Gosden has joined **Steve Chenoweth**'s group as an ARC Linkage International Fellow (UQ and Ottawa). He will be investigating geographic variation in the mate preferences of Australian *Drosophila serrata*, having previously worked on Swedish damselflies. Two PhD candidates have also joined Steve's lab this year.

Scott Allen will look at the genetic basis of sexual antagonism in *D. serrata*, and **Camille Latimer** will work on thermal dependence of locomotory activity in *Drosophila*.

Mike Furlong attended the *3rd International Symposium on Biological Control of Arthropods* in Christchurch (NZ) during February, where he organised and convened a session "Capacity building through action learning in region wide biological control" and gave two presentations, "Institutional capacity building in applied entomology through collaborative research in Democratic People's Republic of Korea" and "Combining ecological and molecular methods to investigate predation of a lepidopteron pest complex of *Brassica* crops".

Lyn Cook and Honours student **Penny Mills** have been out and about searching for specimens of *Apiomorpha minor* for Penny's project. Although colleagues in the southern states have had some success, Queensland specimens had been elusive until February, when a tree toppled by one of the recent storms revealed several galls of both females and males in its crown. **Paul Lin** recently undertook field work in Taiwan, where he found several coccids relevant to his PhD

study. He is now in the USA to obtain dried museum specimens to supplement his field work. **Penny Gullan** and **Peter Cranston** visited UQ, QUT and QDPI&F in late February/early March.

Gunter Maywald is taking time out of his busy PhD schedule each week to tutor third year entomology students. Meanwhile, first year "Biodiversity and Our Environment" students have been assisting **Robbie Wilson** collect and identify dung beetles from across Brisbane and surrounding regions as part of an ARC-funded project investigating local biodiversity. Students have been trapping beetles in their backyards, before identifying specimens to species in the classroom.

Lyn COOK

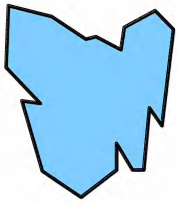
School of Natural Resource Sciences, QUT

Reports from QUT only appear to arrive once every 12 months: as the new local councillor I'll try and do better. Since this time last year, entomology at QUT continues to grow, but with one major loss. **Raghu** and QUT didn't seem to align, so we wish him the very best in his new post with the NT Government as Regional Team Leader- Sustainable Plant Industries, at the Arid Zone Research Institute, Alice Springs. While we won't be able to replace Raghu, the research strength of the School is being strengthened with substantial funding from the CRC National Plant Biosecurity. Two CRCNPB funded postdocs, **Solomon Balagawi** and **Mark Schutze** have just been appointed, both of whom will be working with **Tony Clarke** and collaborative partners on fruit fly related projects. Solomon will be working on a project with Qld DPI&F and Vic DPI looking at the science underpinning pre-harvest Q-fly control, while Mark will be working on a large international project (with many partners) developing diagnostics for the pest species of the *Bactrocera dorsalis* complex. **Grant Hamilton** is also finalising the appointment of a third postdoc to a CRC project seeking to optimise procedures for pest sampling within grains. Additional to the postdocs, other CRCNPB focused entomology at QUT includes **Amy Carmichael** deeply involved in the Plant Biosecurity Toolbox (http://www.padil.gov.au/pbt/), **Mat Whitehouse** working in stored products entomology and PhD students **Sakuntala Muthuthantri** (fruit flies), **Susan Harvey** (whiteflies) and **Bo Zhang** (Russian Wheat Aphid).

The School recently hosted a visit by **Peter Cranston** who, as a co-supervisor, had come for PhD student's **Matt Krosch's** second year progress summary. Matt is busy using molecular techniques to study both large (ie cross-continental) and fine (i.e. local population level) distribution of Gondwanan chironomids, a continuation of work started in his honours, a publication from which is due out soon in *Austral Ecology*.

Tony CLARKE
SE Qld Regional Councillor

TASMANIA



University of Tasmania, (School of Agricultural Science and TIAR)

John Hunt and **Ruth Archer** (University of Exeter, UK) visited **Geoff Allen** and **Paul Walker** in January on their trip around Australia to collect field crickets for evolutionary biology studies.

Department of Primary Industries and Water

Cathy Young is no longer at DPIW New Town laboratories after accepting the position of Senior Curator of Zoology at the Tasmanian Museum and Art Gallery. Here Cathy will be able to further pursue her passion for Geometrid taxonomy. Cathy will be greatly missed at New Town, especially for her extensive knowledge of Lepidoptera.

Jamie Davies and **Guy Westmore** have recently commenced as entomologists at DPIW New Town laboratories. Jamie is a native Tasmanian who has spent the last three years with the Victorian Department of Primary Industries working on biological control of weeds. Jamie will now focus on biosecurity related invertebrate identification. Guy (another local Tassie boy) is writing up his PhD on environmental and molecular aspects of onion thrips transmission of Tomato Spotted Wilt Virus. Guy is currently working on fruit fly

contingency planning and is a National Fruit Fly Strategy Coordinator.

WESTERN AUSTRALIA

Department of Agriculture and Food, Western Australia (DAFWA)

Congratulations to Senior Entomologist **Francis De Lima** who has been awarded one of the Department Excellence Awards 2008.

The department's Excellence Awards recognise staff whose activities support a culture of excellence in the organisation and foster an environment of innovation and creativity. Francis received his award for his significant contributions to agriculture, especially in the area of post-harvest research and development over the past 25 years.

Plant Health Australia has identified Carrot rust fly (*Psila rosae* Fabricius) and Carrot cyst nematode (*Heterodera carotae* Jones) are the top threats to the Australian carrot industry. Both these pests are exotic to Australia. Carrots are an important vegetable crop in Australia that earns millions of dollars from the export market. In 2007 Horticulture Australia Ltd (HAL) commissioned DAFWA to develop Pest Risk Assessments, Pest Specific Incursion Management Plans, and Diagnostic Protocols for these two pests. **Marc Poole** and **Ruben Flores-Vargas** have been involved in these projects and they recently published series of documents that include Risk Assessments, Pest Specific Incursion Management Plans, and Diagnostic Protocols for both pests. These projects were funded by HAL with financial support of the carrot industry.

Stewart Learmonth from Manjimup Horticulture Research Institute,

Francis De Lima accepts the Department Excellence Award from Director General Ian Longson (Photo-Courtesy of DAFWA)

Barriers on an olive trees stop to apple weevils (Photo S. Broughton)

Southwest WA, described that insect work is a veritable fruit and vegie salad. This season has seen an outbreak of a new pest in grapevines, which turned out to be a native species of moth – apple looper. It has been responsible for low level fruit damage in apple orchards, but never in vines – or at least not at the level that appeared this season where spraying was undertaken in many vineyards around Margaret River. Six-spotted mite, another relatively new pest in WA vineyards, has increased in abundance in two Pemberton vineyards.

European red mite has been present at levels requiring control in Manjimup/Pemberton apple orchards. This relatively new mite species seems to be fast becoming endemic in lower south west orchards. Monitoring of thrips in deciduous fruit tree orchards has highlighted the importance of clover ground covers on maintenance of western flower thrips populations in at least one Manjimup orchard. Trapping for eucalyptus weevil, which is an issue for Pink Lady apples that are exported, commenced in three Manjimup orchards and one Donnybrook orchard. The presence of low numbers of weevils in an earlier maturing variety has been detected during harvest, and just over the past 2 weeks, invasions of Pink Lady apples has commenced. Management options are being considered.

A delegation of Indonesian farmers, government administration and research officers visited Manjimup Horticultural Research Institute in February. They were involved in a training course to improve their skills in potato production as part of a joint ACIAR project to enhance this industry in Indonesia.

Modika PERERA
WA Regional Councillor

NEW SOUTH WALES

Charles Sturt University (CSU), Orange

The highlight of the first quarter of 2009 for the CSU Orange group was the 3rd International Symposium on Biological Control of Arthropods. Held in the CBD of Christchurch in New Zealand, the symposium afforded the opportunity to sample delightful parklands and eateries as well as visit the nearby Lincoln University campus. The scientific program covered subjects as diverse as the use of molecular methods for predator diet analysis to the effects of landscape on biological control. Three of the CSU PhDs won prizes for their poster papers: **David Perovic, Marja Simpson** and **Kris LeMottee**. **Jennifer Spinner** also presented on her work on fruit fly parasitoids and **Catherine Gitau** gave an update on her Papua New Guinea-based postdoc on Finschaffen disorder, a mysterious oil palm problem. **Geoff Gurr** presented two talks that provided an overview of the group's work on conservation biological control in various agricultural systems.

Geoff Gurr has been appointed to the NSW Scientific Committee. He will contribute expertise on ecology and invertebrate biology to the committee's work on recovery and abatement plans for threatened species, populations and communities.

Olivia Kvedaras and **Min An** visited from Wagga Wagga in January to work with Geoff and **Yong Seok Choi**. Several days of intensive olfactometer and GCMS work revealed fascinating insights into the influence of silicon on induced plant defences. That work will be continued by a new PhD, **Vanessa Connick** with Aaron Simmons leading the supervisory team. In February, **Anna Rathe** from New Zealand joined the group on a CRC National Plant Biosecurity-funded project that will prepare Australia for the likely arrival of glassy winged sharpshooter. Anna is based at NSW DPI Gosford with **Leigh Pilkington** as her local supervisor.

Sagrario Gamez-Virues has now met all of the requirements for the award of her PhD on the role of farm shelterbelts in biological control Congratulations Sagrario!

NSW DPI, Orange Agricultural Institute

Murray Fletcher and **Peter Gillespie** took several drawers of insects to St Josephs Primary School in mid March to talk to about 60 students about insects. The enthusiasm of primary aged children for insects is infectious and their many questions were insightful and, occasionally revealing. How do you explain to a large group

of children why a female mantid eats the male after mating? Good fun was had by all!

Catherine Gitau, Geoff Gurr, Kris Le Mottee and David Perovic on an excursion to Lincoln University from the International Symposium for Biological Control of Arthropods in New Zealand, February 2009 (Photo: Catherine Gitau, Charles Sturt University).

The NSW National Parks Association held another Community Biodiversity Survey in March, this time based in Breelong National Park, a new (2005) park near Gilgandra. **Murray Fletcher** led the Invertebrates Team (photo above) which set up malaise traps in different plant communities and did general collecting under bark, sweeping and beating up shrubs to put together a nice little collection of local insects. These will be photographed for the use of the local National Parks rangers who were very interested in the results. Only problem was that there weren't enough Auchenorrhyncha.

A new exotic aphid has been identified by **Alan Boulton** of Yanco Ag. Institute and confirmed at OAI by **Murray Fletcher**. The species was detected on bamboo growing in the tiger enclosure at Western Plains Zoo in Dubbo. Volunteers to do the delimiting survey were a little hard to find.

Hazard Sites Surveillance has continued under **Peter Gillespie**'s supervision with **Nicole Reid** and **Holger Löcker** surveying on the north coast and two casual employees surveying in the Sydney region.

NSW DPI (Wagga Wagga Agricultural Institute)

Stored Grain

In February, the Stored Grain Entomology team travelled to Brisbane for a workshop with QDPI&F, DAFWA and QUT. The prime reasons for the trip were to ensure all protocols used in the National Chemical Resistance Monitoring project were the same, as well as to develop Phase 2 proposals for the stored grain insect projects funded by the National Plant Biosecurity

CRC. After a few days of lively discussions (and some good food), agreement was reached by all parties involved. The rest of our time has been spent plodding along with our usual work routines – sampling, sorting, bioassays and a few relaxing ales!

Wine grapes

Andrew Loch continues to work on the yet to be identified vine borer moth in Riverina wine grapes. This xyloryctid moth is likely to be a species of *Echiomima* or *Maroga* based on DNA barcoding work conducted by **Andrew Mitchell**. This emerging pest does not yet affect all grape growers although its distribution appears to be slowly spreading. Similarly, not all wine grape varieties are affected, with the moth displaying a strong but strange penchant for the red wine varieties Merlot, Ruby Cabernet and Pinot Noir. Feeding by the moth larvae around the base of the vine shoots can cause death and stunting of shoots, with growth and yield losses of around 45%. Future work will focus on management strategies.

Fruit fly and silicon & induced plant defences

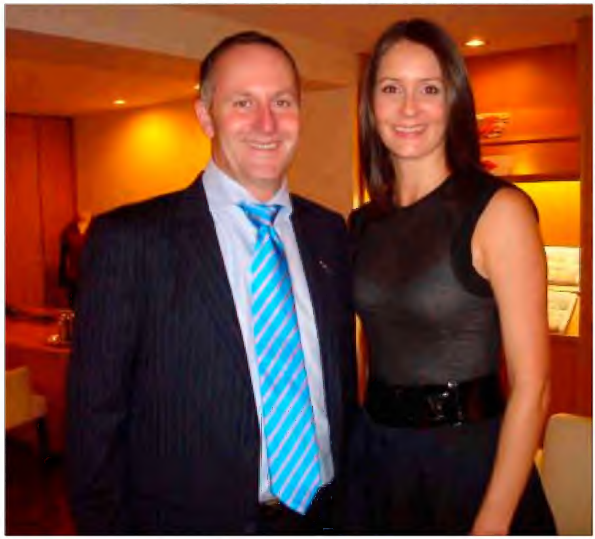
The current year has certainly provided a number of highlights for the team. In January, **Min An** (CSU, Wagga) and **Olivia** travelled to CSU, Orange to work with Geoff Gurr (CSU, Orange) and **Yong Seok Choi** on silicon and induced plant defences. Intensive studies over the better part of a week resulted in some particularly novel work that has since been submitted for publication. That work will be continued by a new PhD candidate, **Vanessa Connick** supervised by **Aaron Simmons** (CSU, Orange), **Geoff Gurr** and **Olivia**. A subsequent meeting with two silicon industry bodies has led to the provision of funds that will also enable further work in this exciting field of research that no doubt has wide agricultural applicability.

In March, 2008, members of the team attended the 3rd International Symposium on Biological Control of Arthropods, Christchurch, New Zealand. The symposium covered topics that ranged from inducible plant defences and their impacts on biological control agents to the molecular gut-content analysis of predators. **Olivia** presented two studies on the use of irradiated fruit fly eggs and larvae as hosts for rearing fruit fly parasitoids.

PhD candidate **Jennifer Spinner** also presented the results of her work on parasitic wasps as a new eradication tool against fruit fly incursion management in Australia. Postdoctoral fellow **Yong Seok Choi** presented a poster on the role of silicon in induced plant defences for enhancing natural enemy attraction to pest-infested plants. In addition to being a charming city to visit, **Olivia** was afforded the opportunity of meeting the **New Zealand Prime Minister, Mr John Key** (see image). Although only a brief meeting, Olivia discussed with the PM, topics ranging from biosecurity to bushfires and how NZ and Australia cooperate in these areas.

Evolution & Ecology Research Centre, University of New South Wales

Entomology is now up and running at UNSW – actually from May 2007. **Gerry Cassis** has set up an insect systematics and biodiversity lab in the Evolution & Ecology Research Centre, in the School of Biological, Earth and Environmental Sciences. The current team includes research assistants **Celia Symonds**, **Hannah Finlay** and **Fiona Powell**. **Nik Tatarnic** is in the first year of



New Zealand Prime Minister, John Key and Olivia Kvedaras in Christchurch, New Zealand

a three year postdoc on the systematics of the thread-legged bugs of Australia, as well as continuing his ground breaking work on traumatic insemination in Cimicoidea. Nik and Gerry also have an Australian-Pacific Science Foundation grant to examine sexual conflict of the mirid genus *Coridromius* in Papua New Guinea. Masters student **Ratnawati Hazali** is working on the systematics of the paleotropical mirid genus *Pseudoloxops*. MPhil student **Luis Cayetano** is being supervised by **Russell Bonduriansky** and co-supervised by **Gerry Cassis**, and is working on the evolution of insect genitalia. **Michael Elias**, who recently received an ABRS Honours scholarship, has commenced study on the systematics and phylogenetics of the land bug family Piesmatidae. Recently, **Geoff Thompson** from the Queensland Museum joined the team on a three month secondment to draw up the genitalia of Australian seed bugs, belonging to the family Rhyparochromidae.

Main projects at the moment include: the last year of work on the US National Science Foundation Plant Bug PBI project, systematics of Australian seed bugs and lace bugs, historical biogeography of Australian true bugs, coextinction of herbivores on threatened species of acacias, traumatic insemination and sexual conflict in Cimicomorpha, invasive biology of the sycamore lacebug, and the investigation of the impact of rodents on seed recruitment and insect seed predators on Lord Howe Island. Visitors are now coming by, and the team has had a productive visit from **Malte Ebach** from Arizona State University, who has joined forces with the Cassis' lab to examine the historical biogeography of Australasia. **Nik Tatarnic** and **Gerry Cassis** have just returned from a trip to University of California Riverside, for an *Encyclopedia of Life* meeting and the delivery of true bug species pages for this biodiversity program. The field season commences early this year, with a planned trip to Queensland and the Northern Territory in April, with **Geoff Monteith** of the Queensland Museum, and a rodent trip to Lord Howe Island. In April, DNA sequencing will commence and histological work is now in full swing. In addition, watch this space for a new course in systematics theory and practice at UNSW in 2010.

University of Sydney, Faculty of Agriculture, Food and Natural Resources

The Agricultural Entomology group was joined in February by **Yacoub Batta** from An-Najah National University for a three month International Visiting Research Fellowship. Previously, he had spent an enjoyable six months with the University of Adelaide. Yacoub is testing novel formulations of entomopathogens against several local pest species. Also in February, **Sarah Mansfield** presented a paper to the Third International Symposium on Biological Control of Arthropods in Christchurch, New Zealand. She then spent a week at the Cocoa Coconut Research Institute in East New Britain, investigating the problems posed by cocoa pod borer in that region. Among the postgraduate students, **Afsheen Shamshad** will receive her PhD in May. Her thesis title was Integrated Pest and Disease Management of Cultivated Mushrooms, *Agaricus bisporus*. **Alinesi Chakwiya** has completed her MAgr, including a study on the relationship between red pepper mites and *Trichoderma* spp, and returned to Zambia. Two new fourth year students have joined the group for 2009. **Dominic Cross** is investigating parasitoids of *Thaumastocoris* spp. with support from an Australian Entomological Society Research Grant to **Sarah Mansfield** and **Annie Noack**. **Jessica Smart** is working on the biology of pygmy mites, *Microdispus lambi*, a pest of cultivated mushrooms, with **Alan Clift**.

AQIS – NSW Entomology

Two new staff have recently joined the AQIS team at Rosebery. **Liza Miller** has made good the adage that entomologists never really die, they just get picky. After 7 years of working in aquatic ecology with state agencies, Liza has moved from the water to the land to work as quarantine entomologist for AQIS NSW. Her main tasks are to identify intercepted insects and mites and provide advice and training to quarantine officers. Her background in natural resource management and aquatic ecology will stand her in good stead as she adapts to the wide and varied working environment at AQIS. After working with AQIS Entomology as a contractor for the past two years, **Ben Boyd** has recently been employed as the Entomology lab co-ordinator. Previously Ben has worked at

CSIRO Entomology in the ANIC, working in the Coleoptera section. Ben is enjoying his new role and the never ending challenges of identifying little brown beetles.

University of Western Sydney

Markus Riegler has recently joined the entomologists **Robert Spooner-Hart** and **Andrew Beattie** at the Centre for Plant and Food Science, University of Western Sydney, as a new research/teaching staff member. Markus' research focuses on the biology of insect symbiosis and their application in biological control. Markus has previously worked in Scott O'Neill's lab at UQ and currently contributes to an international research project on the application of *Wolbachia* bacteria to modulate mosquito population age structure- a new strategy to reduce transmission of vector born diseases. He has worked on tephritid fruit flies and *Wolbachia* in the past and is currently building entomological research in association with the Hawkesbury Forest Experiment, a large field experiment at UWS that scores the effects of climate change on eucalypt trees.

NSW DPI, Elizabeth Macarthur Agricultural Institute

Grant Herron, EMAI, and **Lewis Wilson**, CSIRO ACRI, collected aphids and mites for DAN197 from the 9-12 July. Grant and Lewis travelled from Narrabri north through Dalby and as far north as St George. **Martin McLoon**, Molecular Biologist, in the Entomology Insecticide Resistance group has taken voluntary redundancy and his last day of service was on 31 March 2009. Martin spent his last full week assisting **Louise Rossiter**, Research Scientist, NSW DPI, Narrabri. The aim was to continue research into a putative novel insecticide resistance esterase in the cotton bollworm, *Helicoverpa armigera*. **Graeme Gullick**, Technical Officer, Entomology Insecticide Resistance group has also taken voluntary redundancy and his last day of service was on 31 March 2009. **Tanya Tomlinson**, Technical officer, with the Entomology Insecticide Resistance group reports she intends to return from maternity leave on 6 April.

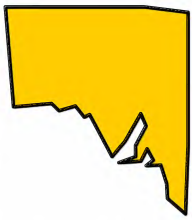
The glassy winged sharpshooter, **Homalodisca vitripennis** *(photo California Dept. Food and Agriculture)*

NSW DPI, Gosford Primary Industries Institute

Anna Rathe, an ex-patriot of New Zealand, has joined **Leigh Pilkington** at NSW DPI, Gosford Primary Industries Institute, and **Geoff Gurr**, Charles Sturt University, Orange, for a three year PhD project. Her project will assess the risk and mitigate the impact of any possible incursion in Australia by the glassy-winged sharpshooter, *Homalodisca vitripennis*, and a pathogen associated with the insect, *Xylella fastidiosa*. Anna will spend some time in California assessing Australian native plants as hosts for the insect and determining which Australian native plants may act as reservoirs for the disease or may show symptoms. The project is funded by the National CRC for Plant Biosecurity and she has already won some competitive grants from the EH Graham Centre for top-up and travel funds.

Sarah MANSFIELD/Murray FLETCHER
NSW Regional Councillors

SOUTH AUSTRALIA



Sansom Institute, University of South Australia

Another season of mosquito surveillance and control is drawing to a close. **Stephen Fricker** has almost completed his work along the River Murray, once again reporting on very low mosquito abundance due to continuing dry conditions. In contrast, **Sam Williams** has had plenty of salt

marsh mosquitoes to contend with in her north west Adelaide surveillance program.

Christie Bader continues to study Australian southern salt marsh mosquitoes for the NZ government and will also be starting her Honours this year on egg longevity and adaptation to local climate in these animals. **Natasha Wilson** is finalising field collections of her urban Culex mosquitoes for her Honours project, while Katherine Leach continues to assess the off target impacts of insecticide-treated barriers for her Honours. **Gina Rau** has joined the lab this year and will be studying the impact of climate change on urban container-breeding mosquitoes.

PhD student **Aishah Azil** recently returned from Malaysia where she presented her paper on dengue vector surveillance at the Malaysian Society of Parasitology and Tropical Medicine annual scientific meeting. In mid-April, her supervisor, **Craig Williams**, will be heading to a summit in Cairns, where the very large dengue epidemic there will be discussed. Craig will be presenting his latest *Aedes aegypti* population **Scott Ritchie** (JCU) who is convening the meeting.

Mel Schneemilch has been really attacking her PhD work on the ecology of Acrotriche heathland plants with vigour, and continues her love affair with the ants that hang out in the heath. **Mike Kokkinn** continues his research on squid ink ecophysiology and has everyone envious of his frequent field trips to go squid fishing throughout SA.

Museum of SA

A workshop was held at La Trobe University, Wodonga Campus on February 10 and 11, 2009, the first held since 2004. The workshop was organised by **Phil Suter** of La Trobe University and other members of the Taxonomy Research and Information Network (TRIN). Keys were presented for Chironomidae larvae by **Chris Madden** (Freshwater Macroinvertebrates), freshwater Oligochaeta by **Adrian Pinder** (WA Department of Environment and Conservation) and the mayfly family Coloburiscidae by Phil Suter. **John Hawking** and **Lyn Smith** also made a presentation about the MDFRC web guide to identify aquatic macroinvertebrates to family. **David Yeates** of ANIC also talked about the CSIRO insect families project and the future plans for keys to adult insects. It is expected that these workshops will now become an annual event organised by TRIN each year.

In September 2008, **Mark Stevens** took up a post as Terrestrial Invertebrate Researcher at The South Australian Museum. A large focus of his work will be about Australian ecosystems, but to date his research has focused mostly on Antarctica and New Zealand, and in January 2009 he escaped the soaring >40°C temperatures of Adelaide for his 7th journey south.

The current field sortie was part of a large International Polar Year project [http://www.ipy.org/] funded by Antarctica New Zealand [http://www.antarcticanz.govt.nz/] and the New Zealand Foundation for Science and Technology, and hosted at Waikato University, NZ. The project 'TABS' - Terrestrial Antarctic Biodiversity Survey [www.nztabs.co.nz] is a very ambitious project that attempts to describe and interpret the biocomplexity of terrestrial ecosystems in Antarctica. The intention is to describe the biocomplexity, that is, the organisms and their community structure and linkages, at sites in the Dry Valleys of Antarctica. At each location traditional and cutting-edge molecular techniques are used to describe the biota from visible lichens, mosses and invertebrates to the hidden microbes to provide a comprehensive picture of systematic and functional biodiversity in these systems, which in turn will help resolve the drivers of biodiversity in the environment. This information will then be reported on a GIS framework that will include landscape and environmental parameters, as well as organic matter and nutrients and the sources of organic matter. Integrative modelling will not only describe biota location but also identify keystone species and factors controlling distributions.

Knowledge of what determines present biodiversity will help us to predict the effects of global climate change and other impacts, information valuable to reveal synergies, and as a vital comparator for studies elsewhere in polar regions where we see some of the greatest levels of environmental change anywhere on earth.

The University of Adelaide

Andy Austin and **Sally Thompson** (PhD student) met up with **Mark Harvey** (WA Museum) and colleagues in the field in south-west Western Australia to collect, amongst other things, platygastroid wasps as part of the Planetary Biodiversity Information Platygastroidea project. Apart from minor problems with a hire car, the collecting was moderately successful, although very dry in the Stirling Ranges.

John Jennings visited **Lynn Cook** at University of Queensland to begin work on the on-line course 'Insect Identification and Taxonomy', which will form part of the National Entomology Curriculum initiative. See http://www.entomology.edu.au/ for more details. John also attended the recent meeting of TaxA (Taxonomy Australia) at the Australian Museum, Sydney. **John Jennings** has also been elected President of the Royal Society of South Australia.

Andy Austin and **John Jennings** have made several brief appearances on both commercial and ABC regional radio talking about a range of topics ranging from European wasps to crickets.

Margaret Byrne (Western Australian Department of Environment & Conservation) visited Adelaide in late March for an ARC Environmental Futures Network meeting and gave a seminar while she was here on the evolutionary and conservation genetics of the WA flora in relation to climate change.

Kerry Davies visited the USDA's Australian Biological Control Laboratory at CSIRO Indooroopilly in Brisbane in March, to meet and work with **Dorota Porazinska** (Uni. Of Florida, Fort Lauderdale) on a project looking at soil nematode biodiversity associated with *Melaleuca quinquenervia*. She also caught up with **Matthew Purcell** and the crew at Indooroopilly.

Miscellaneous

Peter Allen is again, after many years, looking down an entomological microscope helping **Roger Clay** identify, to Family, insects and others collected in pitfall traps and by sweep netting on Roger's property east of Adelaide (between Harrogate and Kanmantoo on the Bremer River). Roger has funding from the Native Grasses Resources Group (South Australia) for a biodiversity study of grassland and is also comparing collections in plots containing significant native perennial grass and ones with only introduced annual grasses and weeds. Roger and Peter have been helped greatly so far by **Eric Matthews** (beetles), **John Jennings** and **Lars Krogmann** (wasps), **Peter Crisp** (mites) and **Ken Henry** for access to the insect collection at the Waite Campus. Collections have been made during summer, winter and spring 2007 and a repeat summer collection in 2008. Roger has an adjunct appointment at the University of South Australia, has a particular interest in ants and has spent time with **Alan Andersen** in Darwin. Anybody who is interested in assisting more detailed identification of specimens in any of the groups would be very welcome; contact Roger at roger.clay@unisa.edu.au.

Joanne KENT
SA Regional Councillor

Mark Stevens (below) escapes the Adelaide heatwave to the Dry Valleys of Antartica as part of a Terrestrial Antarctic Biodiversity Survey. Above: sampling at sites in the southern dry valleys. (Photo M. Stevens)

NEWS FROM AFFILIATED SOCIETIES

ENTOMOLOGICAL SOCIETY OF VICTORIA

At its first meeting for 2009 the Society invited members of camera clubs and local entomologists to a discussion on digital photography techniques. It seems that the best results come from the SLR 'lookalikes' with their interchangeable lenses, flash lighting is as hard to master as ever, but the ability to take hundreds of shots of the same insect greatly enhances the probability of finding an outstanding one amongst the dross. Other than judicious cropping, there were not many comments about digital enhancement; perhaps that is next year's topic. Reasons for insect photography included the provision of a digital inventory of 'what's on our patch', or to produce startling images and insects are such a good medium for that. At the end of the night the score was Art – 6; Science – 3. One of the ironies is that those who won't kill insects, only photograph them, are very reliant on the Museum's pinned collection to identify their specimens.

Future meetings include an AGM where a shake-up of the existing Council probably won't occur; Parks Victoria's management of invertebrates; and a photographic excursion through the Order Coleoptera. Visit Melbourne in August and join us on an exclusive tour of the CSIRO Forests Products entomological collection.

As you know from the review in the last issue of *Myrmecia*, 'Moths of Victoria, Part 1. Bombycoidea' is available and selling well. With the balance of The Wettenhall Foundation grant and sales revenue to date, funding for Part 2 is assured. Our schedule has it going to the printer in July, so watch this space. It will comprise about 150 species from the Families Oenosandridae, Notodontidae, Lymantriidae, Arctiidae, Nolidae and Herminiidae, all of the known Victorian fauna to date.

A second publication venture has been the preparation of "Collecting and Sampling Insects". It arose from a talk given to the Society by **Ian Endersby** some years ago and his overhead slides were collated into a booklet for members. Interest was shown by staff members at Monash and UNE and so it has been revised and published. It covers sampling techniques for terrestrial, aquatic and leaf litter habitats with both a qualitative and quantitative emphasis. While it does not provide you with sampling plans it emphasises, on nearly every page, the importance of keeping sampling effort constant between surveys. We believe it complements, rather than competes with, the Upton book because its emphasis is more on ecological surveying, not museum and personal collecting. You can find a table of contents and an order form on the AES website or you can get details from vicmoth@entsocvic.org.au. Laurence Mound has reviewed a copy of the book; his review appears on page 25.

With publications and digital photographs and the demand for colour illustrations in the magazine the nature of the Society is subtly changing; we even offer credit card and EFT facilities and our old-fashioned treasurer weeps because he has lost his paper audit trail. However, there is one constant – over 90% of our members belong because of the *Victorian Entomologist* and all but three want the hard copy version. Editorship reverted to **Daniel Dobrosak** when the new appointee had to withdraw. Recent issues have included some history on the moth *Aglaosoma variegata*, *Junonia orithya* in Micronesia, *Helicoverpa punctigera* as a possible biological control for weeds, a checklist of Victorian Mecoptera and butterfly mating behaviour. We always publish the table of contents from *Aust J. Ent.* If there has been any change it is more photographs.

Come to one of our meetings and surprise us both.

Ian ENDERSBY
Councillor

ENTOMOLOGICAL SOCIETY OF QUEENSLAND

At the March 9 meeting of the QES Mike Furlong gave a fascinating Presidential Address on "Diamondback moth: Management and control in North Korea".

The **2009 General Meetings** are held at 12pm in the conference Room, CSIRO Long Pocket, 120 Meiers Rd Indooroopilly and include:

Tuesday April 14: Nate Hardy QDPI 'Mealybug classification and endosymbiosis'

Monday May 11: Mary Whitehouse: CSIRO
Tuesday June 9: Notes & Exhibit + Student Award speaker
Monday August 10: Perkins Memorial Lecture: Gerry Cassis, UNSW
5pm meeting followed by BBQ
Monday September 14 Trevor Lambkin DPI
Monday October 12: Chris Burwell: QM
Monday November 9: Myron Zalucki: UQ
Monday December 14: Notes & Exhibit + 5pm meeting followed by Christmas BBQ

Visitors Welcome

The 15th **BugCatch** was held on 14th March at Freshwater NP, 34 km north of Brisbane. 9 QES members and 7 visitors collected in many habitats including open forest dominated by large scribbly gums, an open area dominated by low grasstrees, dense *Casuarina* stands, and small swampy areas surrounded by dense, tall, flowering *Melaleuca* forest using sweep netting, beating, baited pitfall traps, bark spraying, Malaise traps, and hand searching.

The **2009 Council** consists of President Chris Lambkin, Senior Vice President Matt Purcell, Junior Vice President Mike Furlong, Treasurer Desley Tree, News Bulletin Editor Justin Bartlett, Secretary Richard Bull, Permit Officer Susan Wright, Australian Entomologist Editor Dave Hancock and Business Manager Geoff Monteith. Councillors Noel Starick, Anna Marcora, Geoff Thompson.
See all the latest news on our website:
http://www.esq.org.au/

Noel STARICK
Councillor

FEDERATION OF AUSTRALIAN SCIENTIFIC AND TECHNOLOGICAL SOCIETIES (FASTS)

Update on Australia's peak science body

As a member of the AES, you are also a member of the Federation of Australian Scientific and Technological Societies (FASTS), Australia[1]s peak science body.

FASTS represents 60 professional societies and 60,000 scientists, with professional staff who serve you, the AES and the Australian scientific community in a number of ways.

FASTS ongoing activities include Science meets Parliament FASTS annual flagship event, where more than 200 scientists have face-to-face meetings with politicians on key science issues.

Other work includes:

- Highlighting science with the Prime Minister and the Cabinet through the Prime Minister's Science, Engineering and Innovation Council (PMSEIC)
- Organising forums and workshops on key science issues
- Developing science policy at a high level and providing input to Parliamentary Committees, Government Departments and Government reviews and inquiries
- Assisting member societies to raise and develop issues, and
- Distributing information to member societies weekly, and receiving feedback.
- Highlights of 2008 included:
- Forums on Rights and Obligations of Scientists and Researchers and Supporting Risk-Aware Research
- A national roadshow to gather inputs to FASTS submission to the Cutler Review
- Submissions to reviews on Higher Education Research Training, Future Fellowships, Defence, Higher Education Endowment Fund, ERA journal ranking, Questacon, CRC
- Continuation of FASTS successful request for release of ARC grants in early October
- FASTS statement on Climate Change – reported in 145 media outlets.
- FASTS Taxonomy paper highlighting this endangered species at SmP 2008. In 2009 FASTS will:

- Hold Science meets Parliament on 17/18 March
- Provide to Parliament examples of science success stories from FASTS members
- Present On the Radar briefings on upcoming issues in science that need to be addressed by government, industry and the media – contact FASTS with your ideas
- Contribute to the development of National Curricula in science and mathematics
- Investigate whether science graduates have sufficient industry-ready practical skills.

In addition to its continuing and prospective activities FASTS will:

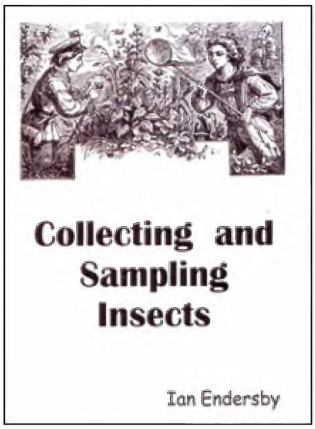
- Establish an expert list of FASTS members for media commentary – via AES
- Hold a forum on Governance of Science – how can science self-organise better?

FASTS seeks your help to keep science at the forefront of the national agenda in these challenging times. For more information visit the FASTS website www.fasts.org <http://www.fasts.org/> .

President: Professor Ken Baldwin.
Executive Director: Bradley Smith.

BOOK REVIEW

Collecting and Sampling Insects by Ian Endersby
Publisher: Entomological Society of Victoria Inc
ISBN: 978 0 9805802 1 1 (pbk.)



This is yet another useful publication from the Entomological Society of Victoria. That society, also the Queensland Entomological Society, continues actively both to introduce insects to the wider community and also to keep professional and amateur entomologists in contact with each other. These efforts are particularly important in Australia, where time and distance often limit associations, and they are often driven by just a few dedicated individuals, such as the author of this booklet. He starts with the important point that we must have a reason for "collecting" – that is killing – insects. Developing a collection, a Cabinet of Curiosities, was appropriate to the 18th Century, but is much less appropriate to our world of decreasing biological diversity. This booklet is primarily about "sampling" insect populations, with the objective of finding out what insects live at a particular site, or comparing the insect assemblages from two sites, or assessing the size of a local population of one or more insect species. The many insect collecting methods used by professional biologists are described and illustrated, whether in flight or from vegetation, leaf litter, or streams and ponds. Suggestions are also made for how such methods can be quantified to produce statistically useful data. The author emphasizes the importance of keeping voucher specimens from surveys, and gives basic instructions on how to pin and, most importantly, label specimens for such collections. This publication will be valuable to anyone who is seriously starting to look at the biological diversity around them, particularly students at schools and colleges, and in their first year at University. Teachers can use this text not only to teach about insects, but also to provide experience in scientific methods and data production. The booklet is excellent value at $10 (only $8 if you are a member of E.S.Vic. or E.S.Qld) plus $2 postage. Contact <vicmoth@ensocvic.org.au>.

Laurence MOUND

ENTOMOLOGY IN THE NEWS

Meat ants may curb the cane toad population
31 March 2009
http://www.usyd.edu.au/news/84.html?newsstoryid=3207

Ecologists in Australia have discovered that cane toads are far more susceptible to being killed and eaten by meat ants than native frogs. Their research - published in the British Ecological Society's journal Functional Ecology - reveals a chink in the cane toad's armour that

A metamorph cane toad is attacked by a meat ant (**Iridomyrmex reburrus**) *(Photo G. Ward-Fear)*

could help control the spread of this alien and invasive species in tropical Australia.

Herpetologist Rick Shine and his colleagues Georgia Ward-Fear, Matt Greenlees and Greg Brown, from the University of Sydney compared the habitat use and activity patterns in meat ants, metamorph cane toads and seven native Australian frog species. They found that, unlike the native frogs, cane toads are poorly equipped to escape the meat ants.

According to Shine: "The spread of cane toads through tropical Australia has created major ecological problems. The ideal way to control toad numbers would be to find a predator that kills and eats toads but leaves native frogs alone. However, bringing in a predator from overseas might have catastrophic consequences, like those that occurred when cane toads themselves were brought in. So we've explored an alternative approach - to see if we could use a native predator. Meat ants (*Iridomyrmex*) are abundant around tropical water bodies, and we often see them eating small toads, so we suspected that there might be some kind of mismatch between the invader and its newly invaded range, for example something about the toads' behaviour that makes them vulnerable to a predator that poses little danger to native frogs."

Through a series of laboratory experiments, the researchers looked at when the ants, frogs and toads were most active, where they chose to live, and how good the frogs and toads were at escaping attacking meat ants. They found that cane toads live in open microhabitats and are active during the day, patterns that match those of meat ants. By contrast, native frogs are nocturnal and hide in vegetation or other shelter during the day, when meat ants are foraging.

Cane toads are also less well-equipped to escape meat ants. Using a specially built runway, they tested the frogs' and toads' sprint speed and endurance. They found that compared to native frogs, cane toads' hops are shorter and slower due to their shorter shin bones. Native frogs were also more vigilant for meat ants than cane toads. Cane toads also tended to rely on ineffective defence mechanisms (crypsis) when attacked.

In combination, these traits rendered cane toad metamorphs more susceptible to predation by *Iridomyrmex* than any of the native frogs tested. That vulnerability presumably reflects the lack of coevolution between cane toads and Australian ants.

Source: University of Sydney.

Web-site: www.canetoadsinoz.com

Fruit flies sick from mating

February 20, 2009

http://www.biologynews.net/archives/2009/02/20/fruit_flies_sick_from_mating.html?utm_source=Friendmail&utm_medium=email

Mating can be exhausting. When fruit flies (*Drosophila melanogaster*) mate, the females' genes

are activated to roughly the same extent as when an immune reaction starts. This is shown in a study at Uppsala University that is now appearing in the scientific publication, Journal of Evolutionary Biology.

Using a combination of behavioural studies and genomic technology, so-called microarrays, researchers at Uppsala University can show how fruit fly females are affected by mating.

"We monitor how genetic expression is impacted by mating and show that the most common process that is affected is the immune defence system," says Ted Morrow at the Department of Ecology and Evolution, Uppsala University.

What's more, the cost of mating turns out to be rather high.

"Previous research findings show that if this cost were not a factor, females would produce 20 percent more offspring," says Ted Morrow.

It is costly for females to mate because competition among males has led to behaviours and adaptations in males that are injurious to females, such as harassment during mating rituals and toxic proteins in their sperm fluid.

"Our results are the strongest evidence that the cost to females is probably tied to the cost of starting an immune reaction. In other words, the males are like a 'sickness' to females," says Ted Morrow.

We can thus conclude the following from the study: the immune defence has developed to combat not only pathogens but also substances produced by males. This lends new meaning to the term 'lovesick.'

Source: Wiley-Blackwell

Evolution, Ecosystems May Buffer Some Species Against Climate Change

March 8 2009

<http://www.sciencedaily.com-/releases/2009/03/090305141620.htm>

Although ecologists expect that many species will be harmed by climate change, some species could be buffered by their potential to evolve or by changes in their surrounding ecosystems.

Researchers at the University of Wisconsin-Madison and the University of Arizona are using a common agricultural insect pest to understand how ecological and evolutionary factors drive population shifts in the face of a changing environment.

A study appearing in the March 6 issue of *Science* shows that both ecological interactions within a food web and the potential for rapid evolutionary adaptation play critical roles in determining how populations of the legume-loving pea aphid fare during increasing bouts of hot weather, one aspect of predicted climate change.

Pea aphid (*Acyrthosiphon pisum*) (Photo http://www.aphidweb.com/Aphids%20of%20Karnataka/Acyrthosiphonpisum.htm)

One of the most important a lesson of the work is that predictions of the consequences of environmental change on populations must take into account both ecological and evolutionary complexities, says Jason Harmon, a UW-Madison postdoctoral researcher and lead author of the new study.

"If you're interested in environmental change and how species are going to respond to it, you can't just look at a single species in isolation as it is right now. You have to think about those other species around it, and you have to think about the species' potential to change along with the environment," he says.

Bouts of high temperature decrease pea aphid reproduction, but inherited bacteria living symbiotically within the aphids bestow them with a possible evolutionary defense. "Because we can experimentally manipulate aphid bacteria, we have an excellent model system to explore evolutionary adaptation," says University of Arizona professor of ecology and

evolutionary biology Nancy Moran, a co-author of the study.

The researchers showed that the degree of heat tolerance conferred by the symbiotic bacteria influenced whether the aphids thrived or succumbed to experimental heat stress in the field. The result shows that the potential for rapid evolution can have a large impact on how populations respond to environmental change, they say.

The detriment of the additional hot days also depended on which of two different predatory ladybeetle species was present, showing that the structures of local food webs may mitigate environmental changes.

"Right now, a lot of work is focused on just individual species," says UW-Madison zoology professor Anthony Ives. "To understand what happens to any one particular species, you need to broaden your scope and consider other species."

While predicting the response of species to climate change is complicated, Ives says, the new study may help de-mystify complex processes by identifying specific factors that are relevant. He hopes that this new work will help other scientists take a broad ecological and evolutionary view while studying the effects of environmental change.

"We're identifying things that people should look for because they could be important, as opposed to saying it's just too complicated," he says. "It's difficult, but not impossible.

Source: ScienceDaily, University of Wisconsin-Madison.

INTERESTING WEBSITES

Keys to the Auchenorrhyncha of Australia

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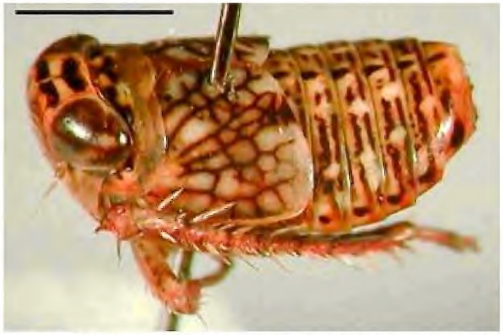


Gunawardenea pulchra ***Fletcher & Moir from the Gibson Desert and Lorna Glen station (Photo M. Fletcher)***

Murray Fletcher's keys to the Auchenorrhyncha of Australia were originally created in 1999 and have been updated regularly as new information was published on the groups. Earlier this year, the key was moved to a new server, which meant updating the technology which was about 10 years out of date. The new look keys have been completely checked (over 2000 separate files) and are published on the new server at http://www.agric.nsw.gov.au/Hort/ascu/start.htm

Ladybirds of Australia

Common spotted ladybird **(Harmonia conformis)*****, just one of many ladybird species featured on the web-site. (Photo S. Broughton)***

A key for ladybird aficionados is now available. Featuring a Lucid key, photos of ladybirds, and information about the distribution and biology of

genera and species, and additional references, the site is found at
http://www.ento.csiro.au/biology/ladybirds/ladybirds.htm

Arthropods of Economic Importance

'*Arthropods of Economic Importance*' is a joint project of the Zoological museum of the University of Amsterdam and the Expert Centre for Taxonomic Identification. The project is also subsidized by the University of Amsterdam, Unesco, Nederlandse Organisatie voor Wetenschappelijk Onderzoek, Ministerie van OCenW, Research School Biodiversity in cooperation with The Natural History Museum, London and CABI Bioscience.

The project aims to provide specialists and non-specialists alike with easy-to-use tools for recognising insects and mites of economic importance in agriculture, horticulture and forestry. The keys have been published using Linnaeus II software, and some keys are available on the web and/or on CD-rom. The following are currently available:
- 'Eurasian Tortricidae'
- 'Diaspididae of the World'

With more titles in this series to follow, including
- 'Tephritidae of South East Asia'
- 'Thripidae of the World', and
- 'Tortricidae of the World'

http://nlbif.eti.uva.nl/bis/projects.php

And if your interests lie outside Entomology, the site has keys on Freshwater Amphipods and Marine Mammals.

COMING EVENTS

The meetings below are sorted by location, with Australian and New Zealand conferences listed first.

2009

September 25 – 28 2009
Darwin, Northern Territory, AUSTRALIA

DARWIN 200: Evolution and Biodiversity The Combined Australian Entomological Society's 40th AGM & Scientific Conference/ Society of Australian Systematic Biologists/ 9th Invertebrate Biodiversity & Conservation Conference.

The year 2009 marks the 200th anniversary of the birth of Charles Darwin and the 150th anniversary of his work The Origin of Species. This Symposium will provide an opportunity to appreciate, debate, and even challenge Darwin's findings, and will bring together an exciting range of speakers from around the globe.

The meeting will consist of plenary sessions with keynote addresses, and a number of symposia.

The following symposia topics (and organisers) have been put forward as possibilities:

- Tropical fruit flies – Dick Drew /Brian Thistleton
- Biosecurity: Pest and Invaders – TBA
- Social Insects – Alan Andersen/Ross Crozier/Brian Thistleton
- EcoGenomics and Biodiversity – Karen Gibb
- GIS applications in Conservation – Di Pearson
- Marine Biodiversity – Chris Glasby/Robin Wilson
- Taxonomy for the 21st Century – John LaSalle
- The taxonomic impediment and taxonomic publications - Dan Bickel/Bob Mesibov
- Phylogeny and Evolution – Michael Braby/Chris Austin
- Biogeography: Wallacea & Australasia – Chris Austin

- Insect-plant interactions in galls - Laurence Mound/Alice Wells
- Lepidoptera as indicators in climate change and conservation - Michael Braby/Neil Collier
- Coral Reef Triangle – Karen Edyvane

Australian Entomological Society members are invited to suggest symposium topics to which they would like to contribute and/or organise.

The symposia are scheduled as 1.5 hour sessions which could be a 30 minute presentation followed by 4 x 15 minute presentations (or simply 6 x 15 minutes presentations). If a symposium is particularly popular it could be extended over 2 or more 1.5 hour sessions.

Please send your suggestions to:

Brian Thistleton: Brian.Thistleton@nt.gov.au

Key deadlines

Receipt of Abstracts: 25 July 2009
Early Bird Registration Closes: 25 August 2009
Conference Website:
http://www.evolutionbiodiversity2009.org
http://www.cdu.edu.au/cdss2009/index.html

IX International Symposium on Thysanoptera and Tospoviruses
Sea World Resort, Gold Coast, Australia
31 August to 4 September 2009

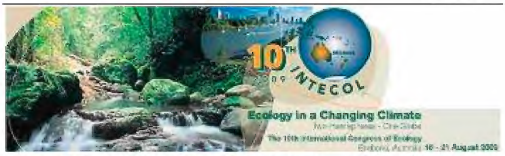
IX International Symposium on Thysanoptera and Tospoviruses

August 31 - September 4 2009
Sea World Resort, Gold Coast, QUEENSLAND

This, the ninth Symposium, will again provide an unequalled opportunity for those interested in thrips, tospoviruses and their interactions to meet and foster further discussion and research in this highly relevant and exciting area of biological science.

Key deadlines

Receipt of Abstracts: 30 June 2009
Early Bird Registration Ends: 30 June 2009
Conference Website: www.istt09.org/



10th International Congress of Ecology
Brisbane, QUEENSLAND
16 - 21 August 2009

Authors are now invited to submit abstracts for oral OR poster presentation for consideration by the Scientific Program Committee. Your 300 word abstract may be submitted on any topic relevant to the Congress theme; Ecology in a Changing Climate, Two Hemispheres - One Globe.

Key deadlines

Receipt of Abstracts: 4 March 2009
Early Bird Registration Ends: 16 May 2009

10th International Congress of Orthoptery
June 21-25, 2009
Anyalya, TURKEY

Key deadlines

Receipt of Abstracts: 1 April 2009
Website: www.ico2009.org/index.html

13th International Symposium on Trichoptera
June 22 – 27, 2009
Białowieża, POLAND
Website: www.biol.uni.lodz.pl/trichoptera2009/

IOBC Meetings/Workshops

September 6-11 2009
Crete, GREECE
Integrated Control In Protected Crops, Mediterranean Climate, IOBC/WPRS Working Group Meeting.
Contact: C. Castane, Cristina.Castane@irta.es.

October 2-8 2009
Dubrovnik, CROATIA
IOBC/WPRS Working Group "Integrated Protection In Field Vegetable Crops".

Contact: R. Collier:
Rosemary.Collier@warwick.ac.uk.

October 7-9 2009
Dubrovnik, CROATIA
IOBC/WPRS Working Group, Pesticides And Beneficial Organisms.
Contact: B. Baric, Baric@agr.hr.

November 1-4 2009
Staufen im Breisgau, GERMANY

IOBC/WPRS Working Group "Integrated Protection and Production in Viticulture".
Contact: A. Calonnec,
Calonnec@bordeaux.inra.fr.
Website : tinyurl.com/6nma59.

10th International Conference on the Ecology and Management of Alien Plant Invasions (EMAPI)

23-27 August 2009
Stellenbosch, SOUTH AFRICA.

The EMAPI conference series started in April 1992 with the 1st International Workshop on the Ecology and Management of Invasive Riparian and Aquatic Plants at Loughborough University in the U.K. EMAPI 2 was held in the Czech Republic in 1993. Since then, EMAPI conferences have been held every two years (in Arizona, Germany, Italy, the United Kingdom, Florida, Poland, and Australia). They are now well established as the premier international forum for researchers working on all aspects relating to the ecology and management of alien plant invasions.

Contact: D. Richardson, rich@sun.ac.za.
Conference Website: emapi2009.co.za/

Fifth Asia Pacific Conference on Chemical Ecology
October 27-30, 2009, Honolulu, Hawaii
Exploring diversity in life's workings: A celebration of chemical ecology

Fifth Asia Pacific Conference on Chemical Ecology

October 27 - 30, 2009
Honolulu, HAWAII

Please join us in Hawaii, gateway to the Asia Pacific region, for an interesting and informative meeting celebrating 10 years as a society. There will be 12 symposia on chemical ecology, with plenary and invited speakers, poster and 10 min oral presentations.
Plenary and invited speakers:
Keng Hong Tan –insect plant interactions/ fruit fly CE
Michael Hatfield-Marine chemical ecology (invited)

Symposia (organizers)
- Evolution of Moth Pheromones –(Ring Carde, USA)
- Biosensors, Chemosensors and plumes –(Max Suckling, Kye Chung Park, New Zealand)
- Semiochemical Research and Application in Agriculture, Forestry, Uurban, Veterinary and Military uses (Junwei Zhu, Aijun Zhang, USA)
- Synthesis and Formulation of Semiochemicals (Amanda Ramsey, Jocelyn Millar, USA)
- Aquatic Marine Chemical Ecology –(Pei-Yuan Qian, Hong Kong)
- Plant / Microbial Chemical Ecology – (Yoshiharu Fujii Japan, Rensen Zeng, China)
- Fruit Fly Chemical Ecology –(Alvin Hee, Malaysia)
- Chemical Ecology of Invasive Species – (Zhang Zhen China, A. Hee)
- Vertebrate Chemical Ecology –(pending)
- Pheromone Disruption –(Larry Gut USA, Alex Il'Ichev, Australia)
- Molecular Chemical Ecology –(Yongping Huang, China; Yukio Ishikawa, Japan)
- Plant-Animal Interactions –(pending)

Contacts: Eric Jang, eric.jang@ars.usda.gov;
Todd Shelley, todd.e.shelley@aphis.usda.gov
Conference website: http://apace-news.org

Entomological Society of America Annual Meeting

13-17 December 2009
Indianapolis, USA.

The Annual Meeting of the Entomological Society of America is its premier event each year. For a four-day period, thousands of

entomologists and professionals from related disciplines gather from around the world to exchange scientific information and ideas, enhance professional knowledge and skills, network with colleagues and re-acquaint with old friends, and conduct the business of the Society.

Contact: ESA, 9301 Annapolis Rd., Lanham, MD 20706-3115, USA.

Email: meet@entsoc.org.
Conference Website: www.entsoc.org.

2010

8th International Symposium on Fruit Flies of Economic Importance
12-17 September 2010
Valencia, SPAIN

The meeting is organized by the Instituto Valenciano de Investigaciones Agrarias and the TRAGSA-Medfly SIT Program in Valencia. The meeting will take place at the facilities of Valencia Conference Center (Palacio de Congresos). The purpose of the Symposium is to bring together academic, industry, research and action people from the all over the world to discuss the various aspects of fruit flies and recent developments related to Pest Management Strategies. The meeting will encourage cooperation between participants, contribute to spread new findings, promote their practical use and highlight research needs.

Contact: L. Navarro, fruitfly2010@ivia.es.

SOCIETY NOTICES

The Phil Carne Prize
(formerly AES Student Award)

The Society's Phil Carne Prize is aimed at fostering high quality entomological research in young scientists. The name of the prize celebrates contributions made by Dr Phil Carne to the science of entomology and the Australian Entomological Society.

The prize is open to any honours or postgraduate student enrolled in an Australian University, either full-time or part-time, who has not submitted their thesis by the closing date. Entrants do not have to be members of the Australian Entomological Society.

Entries for the prize should be in the form of a scientific paper that deals with research on any entomological topic (or allied group of terrestrial organisms such as mites or spiders). The paper can be in the form of a scientific manuscript ready for publication, a paper that has been accepted for publication or a paper published since the beginning of the previous year to the closing date, but must result from the student's higher degree studies.

Entries are to be the sole work of the entrant, apart from the normally accepted input of academic supervisors, and are to be based on work undertaken while enrolled as a student. They will be judged on their overall scientific merit by a committee of at least three people to be appointed by the Society's President.

Three copies of entries must be submitted to the Secretary of the Society by the closing date (31st July in the year of the award) and be accompanied by a completed application form (see below). The Society address can be found at

www.austentsoc.org.au under Society Information.

The prize will be in the form of a certificate and will also include cash remuneration to the value of $300. The winner will also be invited to present their paper at the Society's Annual General Meeting and Scientific Conference, and will receive a maximum of $1,000 towards conference expenses (registration, travel, accommodation) on receipts.

2009 Illustration and Photographic Competition

A competition to encourage and recognise high standards of entomological illustration

In conjunction with the Society's Annual Scientific Conference and AGM, the Society invites unpublished entries to this competition which will be judged and displayed at the Conference in Darwin in September 2009. The competition is open to members and non-members of the Society who are not employed or contracted as professional illustrators for fee or reward.

Entries, up to three per entrant, must be whole body (dorsal or lateral views) taxonomic illustrations of insects or other invertebrates. The mounted illustrations should not exceed 21 x 30cm (approximately A4 size) and must be suitable for reproduction after reduction by 50%. Please note that these conditions will be strictly applied this year.

Entries must be in the hands of the Conference Organiser by the date advertised on the conference website. Postal entries must be carefully packed and include stamps or postal order sufficient to cover the cost of return postage, where necessary.

CATEGORIES	
Student Illustration Section	Colour
	Black and White
Open Illustration Section	Colour
	Black and White
Photographic Section	

Each entry is to be accompanied by the following information:

1. Name of entrant
2. Postal address
3. Category of entry/entries
4. Current enrolment details (if a student)
5. Scientific name of species illustrated

The Society has usually made available $100 for First Prize and $50 for Second Prize in each of the four illustration categories and $100, $50 and $25 for First, Second and Third Prizes in the photographic section. Highly commended certificates will also be awarded where appropriate. The judges retain the right not to award all prizes if entry numbers or standards are not sufficient.

The Australian Entomological Society shall have the right to display selected works in public and to reproduce the illustrations, with appropriate acknowledgment, on Society goods which it sells and in magazines for a fee.

Australian Entomological Society Inc. Research Grant Scheme

The AES Research Grants Scheme is intended to encourage the advancement and dissemination of entomological knowledge, particularly in relation to the Australian fauna. Applications for conference travel will not be considered.

The grants are primarily for small, short-term projects and will be available only to members of the Society of at least 12 months standing.

Groups will be eligible provided that the primary researcher is a Society member. Total funds available will vary from year to year but will normally be in the order of $2000.

A report to the Executive in a form suitable for publication in *Myrmecia* will be required at the end of the project or, at the latest, by December in the year of the grant.

Each application needs to state clearly:

the aim of the project
the expected duration of the project
a detailed budget, and
contact addresses (including email) and telephone numbers of the participants

The names of one or two possible referees may also be supplied.

The Society Executive will appoint a selection panel to allocate and administer the grants. Applications may be for any amount up to $2000 but remember that small, short-term projects which enable a diverse range of work to be funded will be favoured. Successful applicants will be notified in December and published in *Myrmecia* in the following (February) issue.

Three copies of your application should reach the Secretary (society address at top of this page) no later than **31 October** (see entry form pg. 36, or download from AES site).

The Australian Entomological Society Shop

Photographs of all merchandise can be viewed on the Society Shop page on the society's website.

Glasses featuring a bull ant on the bottom	$7.50 *
Bull ant pin in sterling silver	$35.00 *
Upton, M. S. 1991.Fourth Edition. Methods for Collecting, preserving, and studying insects and allied forms. Australian Entomological Society Misc Public No 3.86pp.	$15.00 *

* plus postage

Postage & Handling

We'll only charge you what it costs us to ship the merchandise to you. Please send your enquiry to jane.wright@csiro.au and she'll come back to you within a few days on a price.

Order Forms

An order/tax invoice form can be downloaded from the society's website. Send your orders to Jane Wright by fax on (02) 6246 4094, email to jane.wright@csiro.au or mail to CSIRO Entomology, GPO Box 1700, Canberra, ACT 2601.

FORMS

PROXY AND NOMINATION FORM

Australian Entomological Society Inc

APPOINTMENT OF PROXIES

I,
.....

of
.....

being a member of the above-named Society,

hereby appoint
.....

of
.....

as my proxy to vote for me on my behalf at the Council meetings and/or Annual General Meeting, as the case may be, of the Society to be held during September 2009, and at any adjournment thereof.

Signed this
.....

day of
.....2009

Signature
.....

When completed, please forward to Dr Alice Wells, AES Secretary, ABRS, PO Box 787, Canberra, ACT 2601

Australian Entomological Society Inc.

NOMINATION OF OFFICER OR COUNCILLOR

I nominate
.....

for election to the office of

.....

Name of nominator
.....

Signature
.....

Date
.....

Name of seconder
.....

Signature
.....

Date
.....

I accept this nomination*

Signature
.....

Date
.....

* The nominee is requested to attach a typed statement, not exceeding 300 words, which includes the following: professional qualifications, address, institution, position held, fields of entomological interest, previous offices or appointments held in The Australian Entomological Society, any other information which may be of interest to members.

When completed, please forward to Dr Alice Wells, AES Secretary, ABRS, PO Box 787, Canberra, ACT 2601

AUSTRALIAN ENTOMOLOGICAL SOCIETY
ENTRY FORM for PHIL CARNE PRIZE

Student name:

Degree in which enrolled:

Date of enrolment:

Institution:

Name(s) of supervisors:

Extent and type of involvement in the study by author(s) other than the student:

Certification by Head of Department:

Send entries, by 31st July, to the AES secretary:

Dr Alice Wells
ABRS
CANBERRA ACT 2601
Australia

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Australian Entomological Society
c/- ABRS
GPO Box 787
Canberra ACT 2601
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PATRON
Her Excellency,
Ms Quentin Bryce AC,
Governor-General of the Commonwealth of Australia

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Bugs for Bugs

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